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JOINT MESSAGEFORM

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VWZD-24-8-363

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	BOOK	MULTI	SINGLE			
ACTION						
INFO						

FROM:
6595TH AEROSPACE TEST WING, VANDENBERG AFB, CALIF., VWZD

TO:
SPACE SYSTEMS DIV., LOSA, CALIF.

SUBJECT: EIGHT-HOUR FLASH REPORT [redacted]

I. SUMMARY

A VEHICLE CONSISTING OF SLV-2A BOOSTER NO. 377 AND S-01A ORBITAL STAGE NO. 1162 WAS LAUNCHED ON THE SECOND ATTEMPT FROM VAFB COMPLEX 75-3, PAD 4, AT 1729:58 (PDT), ON 24 AUGUST 1963. THE PRIMARY LAUNCH OBJECTIVE, TO PLACE THE S-01A SATELLITE WITH PAYLOAD IN A NEAR-POLAR ORBIT, WAS ACCOMPLISHED. DUE TO LOSS OF TRACK BY THE VTS RADAR PRIOR TO S-01A ENGINE SHUTDOWN A DIRECT EVALUATION OF INJECTION CONDITIONS CAN NOT BE MADE. HOWEVER TELEMETRY AND GROUND GUIDANCE DATA INDICATED THAT A NEAR NOMINAL TRAJECTORY WAS FOLLOWED THROUGH INJECTION. INFORMATION FROM FIRST PASS ACQUISITION INDICATED THE ATTAINMENT OF A NEAR NOMINAL ORBIT AND

SPECIAL INSTRUCTIONS

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DATE 24 | TIME
MONTH 8 | YEAR 63

WRITER
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PHONE 866-3771 | PAGE NR. 1 | NR. OF PAGES
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DD FORM 1 MAY 58 173 REPLACES DD FORM 173, 1 OCT 49, WHICH WILL BE USED UNTIL EXHAUSTED

THAT THE BASIC VEHICLE SUBSYSTEMS WERE FUNCTIONING ADEQUATELY.

II. SIGNIFICANT EVENTS

THE OCCURRENCE OF SIGNIFICANT LAUNCH EVENTS ARE AS FOLLOWS:

LIFTOFF (17:49:58.13 PDT) (System Time 1796.13)	ZERO (See Note)
WEB BURNOUT OF SOLID MOTORS	27.5 to 27.7 SEC
THRUST TERMINATION OF SOLID MOTORS	39.6 to 42.3 SEC
JETTISON OF SOLID MOTORS	70.75 SEC
SLV-2A STEERING INITIATED	92.29 SEC
SLV-2A STEERING TERMINATED	144.15 SEC
S-1 COMMAND FOR MECO (LOCKED OUT)	148.32 SEC
MECO (PROPELLANT DEPLETION)	149.04 SEC
VECO	158.83 SEC
SEPARATION COMMAND (S-2)	162.38 SEC
SEPARATION COMPLETE [redacted]	164.7 SEC
ULLAGE ROCKET IGNITION	167.04 SEC
S-02A ENGINE IGNITION	169.95 SEC
S-02A THRUST ATTAINMENT (90 Percent PC)	171.09 SEC
S-02A STEERING INITIATED	181.30 SEC
S-02A STEERING TERMINATED	331.34 SEC

S-01A VELOCITY METER ENABLE (S-3)	352.83	SEC
S-01A ENGINE SHUTDOWN BY VELOCITY METER	412.02	SEC
VTS VERLORT RADAR LOSS OF BEACON	308.	SEC
VTS ACQUISITION BEACON FADE	434.	SEC
VTS TELEMETRY DATA FADE (Link 1)	436.	SEC
VTS TELEMETRY SIGNAL FADE (Link 2)	456.	SEC

NOTE: THE LIFTOFF TIME IS BASED UPON THE LIFTOFF TONE RECEIVED AT VTS, HOWEVER THE TONE WAS TRANSMITTED PREMATURELY BY APPROXIMATELY 0.1 SEC, AS EVIDENCED BY THE TIME OF THRUST ATTAINMENT ON THE MAIN ENGINE AND ALSO THE SOLID MOTORS.

III. SLV-2A PERFORMANCE

ALL SLV-2A SUBSYSTEMS PERFORMED ADEQUATELY FOR ACHIEVEMENT OF THE PRIMARY TEST OBJECTIVES. MAIN ENGINE CUT-OFF (MECO) OCCURRED BY PROPELLANT DEPLETION AS PLANNED. FLOAT SWITCH ACTUATION TIMES INDICATED THAT PROPELLANT UTILIZATION WAS SATISFACTORY.

IV. GROUND GUIDANCE

PERFORMANCE OF THE COMMAND GUIDANCE SYSTEM APPEARS TO HAVE BEEN SATISFACTORY. THE MECO COMMAND, WHICH WAS LOCKED OUT OF [redacted] EFFECTIVENESS,

FROM:

6595 TH AEROSPACE TEST WING, VANDENBERG AFB, CALIF.

PRECEDED PROPELLANT DEPLETION MECO BY 0.74 SEC. SUBSEQUENT GUIDANCE COMMANDS COMPENSATED FOR THE EXTRA VELOCITY PROVIDED BY THE SLV-2A. QUICK LOOK EVALUATION OF THE TRAJECTORY VECTOR AT GUIDANCE TERMINATION PREDICTED FOLLOWING VALUES: INJECTION ALTITUDE OF 99.273 NM (nominal: 99.61 nm), INJECTION FLIGHT PATH ANGLE OF -0.234 DEG (nominal: +0.004 DEG), ORBITAL PERIOD OF 90.910 MIN (nominal: 90.671 min), AND ORBITAL INCLINATION ANGLE OF 74.954 DEG (nominal: 75.00 DEG). BASED ON FIRST PASS ACQUISITION THE ORBITAL PERIOD APPEARS TO BE NOMINAL.

V. S-IIA PERFORMANCE

ALL S-IIA VEHICLE SUBSYSTEMS PERFORMED SATISFACTORILY DURING LAUNCH TO PROVIDE ADEQUATE TRAJECTORY CONDITIONS FOR ORBITAL INJECTION. WITH THE EXCEPTION OF HIGHER THAN EXPECTED CURRENT DRAIN DURING A 0.9 SEC INTERVAL PRIOR TO IGNITION AND A 5.0 SEC INTERVAL APPROXIMATELY 10 SEC AFTER IGNITION ALL TELEMETERED PARAMETERS APPEARED TO BE WITHIN NORMAL. DURING THESE TWO INTERVALS THE CURRENT INCREASED FROM APPROXIMATELY 24 AMPS TO 34 AMPS.

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FROM:

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AT THE TIME OF TELEMETRY SIGNAL FADE AT VTR, THE ORBITAL TIMER WAS SET AT 5440 SEC (STEP 264) IN THE RESET ON POSITION IN THE DECREASE MODE.

VI. SPACE-GROUND COMMUNICATIONS

TELEMETRY DATA FROM ALL LINKS WERE SATISFACTORILY RECEIVED AND RECORDED. VERLORT RADAR PREMATURELY LOST BEACON TRACK AT T+308 SEC DUE TO A FADE-OUT OF THE BEACON RETURN SIGNAL. THE DOWNRANGE SHIP RADAR INITIALLY INTERROGATED THE BEACON AT T+226 SEC BUT NO [redacted] INTERFERENCE WAS EXPERIENCED BY VERLORT. BEACON TRACK WAS MAINTAINED BY THE DOWNRANGE SHIP RADAR UNTIL TM DATA FADE AT T+436 SEC.

VII. COUNTDOWN

LAUNCH WAS ACCOMPLISHED ON THE SECOND COUNTDOWN ATTEMPT. THE FIRST COUNTDOWN WAS INITIATED AT 0825 ON 25 AUGUST 1963 AND PROCEEDED TO T-2.6 SEC (1730 PDT) WHEN A HOLD WAS IMPOSED DUE TO A MALFUNCTION OF A RELAY IN THE BAC AGE ENGINE IGNITION CIRCUITRY WHICH IS LOCATED IN THE BAC PAD ELECTRICAL TRAILER. THE LAUNCH WAS CANCELED AT 1747 PDT. THE RELAY WAS REPLACED BEFORE THE SECOND COUNTDOWN. SEVERAL OTHER MINOR

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AGE PROBLEMS OCCURRED AND ARE DISCUSSED UNDER THE FOLLOWING SECTION.

THE FINAL COUNTDOWN WAS INITIATED ON SCHEDULE AT 0825 ON 24 AUGUST 1963 AND PROCEEDED TO LIFTOFF WITH NO HOLDS. DURING THE FIRST 3 TASKS DAC COMPLETED PRE-COUNTDOWN ENGINE FUNCTIONAL CHECKS WHICH WERE REQUIRED AFTER THE REPLACEMENT OF THE DEFECTIVE RELAY ASSOCIATED WITH THE CANCELLATION OF THE FIRST COUNTDOWN. THE COUNTDOWN OPERATION WAS NOT DELAYED BY THE ENGINE CHECKS. IN TASK 10 CERTAIN PAYLOAD CHECKS WHICH HAD BEEN MADE IN TASK 6 WERE REPEATED FOR ADDITIONAL VERIFICATION.

VIII. AEROSPACE GROUND EQUIPMENT

THE AEROSPACE GROUND EQUIPMENT FUNCTIONED SATISFACTORILY TO ACCOMPLISH THE BOOSTER AND ORBITAL STAGE PRE-LAUNCH CHECKOUT, WITH THE FOLLOWING EXCEPTIONS:

1) OPERATION OF THE LMSC PAD AIR CONDITIONING EQUIPMENT CAUSED EXCESSIVE NOISE ON LANDLINE READOUT OF THE S-BIA VELOCITY METER SIGNAL.

2) A BLOCKHOUSE GUIDANCE LANDLINE RECORDER MAL-

FUNCTIONED AND WAS REPLACED.

3) MODULES IN THE PAD ELECTRICAL TRAILER FOR AUTOMATICALLY LOADING THE S-01A VELOCITY METER CAUSED EXCESSIVE ELECTRICAL SIGNAL NOISE. THEY WERE REMOVED.

4) THE MAST ANTENNA WAS NOT INITIALLY CONNECTED TO THE S-01A VEHICLE DURING THE FIRST COUNTDOWN.

5) THE FIRST COUNTDOWN WAS CANCELED DUE TO A MALFUNCTION OF THE DAC AGE K16-C DC MISSILE ENGINE POWER RELAY IN THE THOR ENGINE IGNITION CIRCUITRY LOCATED IN THE DAC PAD ELECTRICAL TRAILER. THE DEFECTIVE RELAY WAS REPLACED BEFORE THE SECOND COUNTDOWN.

IX. PAD DAMAGE

PAD DAMAGE IS CONSIDERED GREATER THAN NORMAL DUE TO AN AFTER-FIRE AT THE BASE OF THE MAST. ELECTRICAL CABLING AND AIR CONDITIONING DUCTING WILL REQUIRE REPLACEMENT. THE DAMAGE IS NOT SUFFICIENT TO AFFECT NORMAL TURNAROUND OF THE PAD.

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